# Nebraska
UNIVERSITY OF
Lincoln

Statement of Inventor   DEPARTMENT OF ELECTRICAL ENGINEERING

The paper "Implementation Issues in MAP Joint Source/Channel Coding," by K. Sayood, F. Liu, and J.D. Gibson, which appears in the *Proceedings of the 1988 Asilomar Conference on Circuits, Systems, and Computers*, describes a joint source channel coding scheme consisting of a Huffman encoder and a Viterbi decoder. *To begin with it is emphasized that the concept of a disallowed symbol is completely absent from this paper. Furthermore, the concept of a disallowed symbol is absent from the cited patents.* Continuing, in the Sayood et al. 1988 paper the input to the Huffman encoder is a letter from a small set of allowed symbols. The scheme requires that each letter be assigned a unique variable length code. The reason this is important is that the decoding scheme requires there to be a fixed small number of states and in the scheme described in this paper the states correspond to the variable length codewords for the input letters. The scheme only allows the use of symbols from the variable length codes assigned to each input symbol as such symbols are the only ones allocated a state in the Viterbi decoder. The examiner on Page 3 points to the work of Doshi et al. who include a framing byte as part of their encoder which is therefore an allowed symbol as something which someone of ordinary skill should have been able to use in conjunction with Sayood et al. to come up with Claim 1 of the patent. As the Sayood et al. 1988 scheme only works on variable length codes which are codes for the input symbols and can be transmitted at all signaling instants it is not possible to modify in any straightforward manner that scheme to accommodate a sequence of bits that occur only at specified intervals. The scheme of Doshi et al. can be used to provide further error protection however it can not be directly incorporated into the 1988 scheme of Sayood et al..

The patent of Eerenstein et al. describe a finite state machine with an additional absorbing state. A specified set of inputs is used to get from any state to the absorbing state. This particular patent can not be used as described by the examiner for error detection or correction. The patent requires a previously specified set of inputs to get to an absorbing state. As errors do not result in one prescribed set of inputs this patent is not relevant to error detection and/or correction. For error detection what would be required would be for the finite state machine to enter the absorbing state whenever the input varies from a set of specified inputs.

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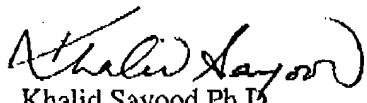
Khalid Sayood Ph.D.
Henson Professor of Engineering

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